REMARKS/ARGUMENTS

In an office action mailed July 21, 2005, the Examiner rejected pending claims 1-13 and 48-52. The Examiner rejected claims 1-5, 7-11 and 13 as allegedly anticipated by US 6,297,072 (Tilmans) under 35 U.S.C. 102(b). The Examiner rejected claims 6, 12 and 48-52 as allegedly obvious over Tilmans under 35 U.S.C. 103(a).

Applicants respectfully cancel claims 2 and 49 and amend claims 1, 3, 8, 48 and 50. The amendments are supported in the specification at least at paragraph [30] and FIGS. 7A-9C.

Applicants respectfully submit that amended claims 1, 3, 8, 48 and 50 as well as those claims dependent on amended claims 1, 3, 8, 48 and 50 are not anticipated by or unpatentably obvious over Tilmans. Tilmans does not disclose, teach or suggest at least the following limitations of the amended claims:

> "a fill port defined by the substrate, the cover plate and a breach in the bond ring; and a liquid sealed within the inner cavity."

as recited in claim 1 and incorporated into dependent claims 3-7;

> "a fill port defined by the substrate, the cover plate and a breach in the bond ring;
>
> an inner cavity defined by the substrate, the cover plate and the bond ring; and
>
> liquid sealed within the inner cavity, the liquid having a coefficient of thermal expansion, wherein the inner cavity has a volume which is small enough so that expansion of the liquid throughout the range of operating temperatures is accommodated by deflections of at least the cover plate, substrate and bond ring."

as recited in claim 8 and incorporated into dependent claims 9-13; or

"a fill port defined by the substrate, the cover plate and a breach in the bond ring; and liquid sealed within the inner cavity."

as recited in claim 48 and incorporated into dependent claims 50-52. Accordingly, Applicants respectfully request that the Examiner withdraw all rejections to claims 1, 3-13, 48 and 50-52.

Moreover, the Examiner has failed to establish a motivation to combine Tilmans with a liquid. Tilmans discusses that, "the cavity (8) is evacuated and next filled with the desired gas such as N2 or a gas mixture such as N2/H2 mixture or even SF6 to a required pressure. Optionallly, the cavity could be evacuated to a vacuum pressure." 5:37-42. Tilmans does not disclose, teach or suggest all of the limitations of the claims. For example, Tilmans does not disclose, teach or suggest combining a "fill port" with a liquid. Nor does the Examiner cite any reference supporting a motivation to use a liquid in combination with the other limitations of the claims.

The rejection of Claim 6 under Section 103 is respectfully traversed, on the grounds that a prima facie case of obviousness has not been established. The assertion that it would have been obvious "to use a curable adhesive as the seal or as both the bond ring and the seal because curable adhesives and solder are conventionally known equivalents that are notoriously well known to the skilled artisan to be useable in the sealing of two substrates to form a cavity therebetween" is unsupported. The failure to support this statement was error. See, e.g. In re Zurko, 59 USPQ 1693, 1697 (Fed. Cir. 2001); MPEP 2144.04 (A) (B) (C), establishing that it is not appropriate for the examiner to take official notice of facts without citing a prior art reference, where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known, and that a holding that general conclusions concerning what is "basic knowledge" or "common sense" to one of ordinary skill in the art without specific factual findings and some concrete evidence in the record to support these findings will not support an obviousness rejection. Applicants respectfully request that, in the event this ground of rejection is maintained, the Examiner cite a reference supporting the

statement, or an affidavit if the assertion is based on the personal knowledge of the Examiner.

The rejections of Claims 12 and 48-52 are also traversed, on grounds similar to those discussed for Claim 6.

New claims 54-57 are fully supported in the specification as filed at least at original claims 4, 5, 10 and 11. Applicants respectfully submit that new claims 54-57 are not anticipated or obvious over Tilmans. Tilmans does not disclose, teach or suggest at least the following limitations of the new claims:

> "wherein the bond ring comprises at least one of a glass frit, adhesive, anodic bond, covalent bond, laser weld or Sol-gel material."

as recited in new claims 54 and 56; or

> "wherein the seal comprises at least one of an adhesive, organic adhesive, epoxy, or glass-based sealant."

as recited in new claims 55 and 57. Moreover, Tilmans teaches away from these limitations. Tilmans discusses that:

> "Traditionally, for these applications, the ambient of the cavity is defined during the assembly of the several components by anodic, fusion or eutectic wafer bonding, wafer bonding using low temperature glasses or polymers as the brazing material and reactive sealing techniques.
>
> A common drawback of these techniques is that they are rather limited in applicability, since device separation is difficult (the device has been made on one of the two wafers). It is also difficult to create electrical contacts. The drawbacks of three of the most common techniques are discussed herebelow.
>
> The technique of diffusion bonding of a Si cap wafer on the device wafer requires flat Si surfaces and a high temperature process.

Wafer bonding techniques such as anodic bonding and silicon fusion bonding require a very clean environment, i.e., low particle contamination. There are applications that are not compatible with these boundary conditions of temperature and flatness. Furthermore, the technique of anodic bounding also requires flat surfaces and needs the application of a high voltage in order to achieve the bonding.

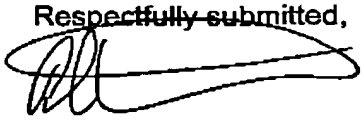
Finally, the technique of gluing does not provide a real hermetic bond."

1:24-47. Tilmans also discusses the "electrodeposition (electroplating) of the solder" 4:42-43 and that, "[t]he solder (3) will melt so as to close the indent resulting in a hermetically sealed cavity with a controlled ambient." Tilmans does not disclose, teach or suggest "wherein the bond ring comprises at least one of a glass frit, adhesive, eutectic solder, anodic bond, covalent bond, laser weld or Sol-gel material" or "wherein the seal comprises at least one of an adhesive, organic adhesive, epoxy, or glass-based sealant."

Conclusion:

For the foregoing reasons, Applicants respectfully request that the Examiner withdraw the rejections to claims 1, 3-13, 48, 50-52, enter new claims 54-57 and allow claims 1, 3-13, 48, 50-52 and 54-57.

Respectfully submitted,



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